REMARKS

This application contains claims 1-26. Claims 4, 10, 17 and 23 have been canceled without prejudice. Claims 1, 5, 6, 11, 14, 18, 19 and 24 have been amended. No new matter has been introduced. Reconsideration is respectfully requested.

Claims 1-26 were rejected under 35 U.S.C. 102(e) over Rekhter et al. (U.S. Patent 6,339,595). Applicant has amended independent claims 1 and 14 in order to clarify the distinction of the present invention over the cited art. Dependent claims 5, 6, 11, 18, 19 and 24 have also been amended for proper dependence.

Claim 1 recites a method for controlling a system of label switched tunnels by sending signaling frames through the tunnels and processing these frames in order to eliminate loops in the system. The claim has been amended to clarify that the signaling frames are generated and processed in accordance with a spanning tree protocol (STP) in a layer 2 transparent LAN system. These added limitations were previously recited in claims 4, 6 and 10 and in paragraph 0021 in the specification. Claim 14 recites a communication device operating on principles similar to the method of claim 1 and has been amended in like manner.

As explained in the specification (paragraphs 0020-0021), a TLS provides layer 2 bridge-like functionality, so that users connected to the TLS may communicate with one another as though they were on the same LAN. Bridges (including the virtual bridges in a TLS) use a learning process to build a database of MAC addresses, and use a broadcast mechanism to distribute packets to unknown destination addresses (paragraph 0005). These aspects of the layer 2 architecture can create serious problems when looped paths exist in the layer 2 network (paragraph 0006). The problem of loops in conventional bridged networks is solved by the spanning tree protocol (STP), as defined by IEEE 802.1D (paragraphs 0007-0016). Adaptation of STP to the TLS layer 2 environment, however, poses challenges that are not addressed by the prior art (paragraph 0023).

The invention recited in claims 1 and 14 provides an answer to these challenges, using novel signaling labels to transmit STP signaling frames through

the label-switched tunnels of the TLS. In this manner, loops are removed from each TLS that uses the label-switched tunnels, so that each TLS has its own loop-free topology (paragraph 0029).

Rekhter, on the other hand, deals with a different sort of virtual network: a layer 3 VPN. Layer 3 networks, such as IP networks, use routing functionality (with many routing instances on a single physical network element), rather than bridging functionality, and use a set of layer-3 protocols to distribute routing tables. Rekhter describes the use of "PE routers" and "CE routers" in providing layer 3 service over a VPN (col. 4, lines 34-57), in order to handle the IP addressing schemes of customer enterprises that transmit data over the VPN. Rekhter neither teaches nor suggests the use of a layer 2 TLS (i.e., virtual bridges), as required by amended claims 1 and 14.

Layer 3 IP networks use the Border Gateway Protocol (BGP) to exchange routing information between different autonomous systems. (See, for example, www.cisco.com/ univercd/cc/td/doc/cisintwk/ito_doc/bgp.htm.) One of the functions of BGP is to detect and reject routing loops. Therefore, BGP serves this purpose in Rekhter's layer 3 VPN, as well (col. 24, lines 39-57, cited by the Examiner). Rekhter makes no mention or suggestion of the layer 2 spanning tree protocol, as recited in claims 1 and 14.

Furthermore, although Rekhter's PE and CE routers exchange BGP packets (col. 25, lines 9-43), Rekhter neither teaches nor suggests that these packets should be transmitted through the actual tunnels of the VPN. Claims 1 and 14, on the other hand, explicitly recite that the STP signaling frame is transmitted through the label-switched tunnels.

In rejecting claim 4, the Examiner maintained that Rekhter teaches signaling frames in accordance with STP in col. 51, lines 31-34. Applicant respectfully traverses this rejection. As noted above, Rekhter makes no mention of STP. Although the passage cited by the Examiner makes reference to shared trees, the trees in question are a part of Internet Protocol version 6 (IPv6), as described by Deering in the reference listed by Rekhter (page 2, first column). These shared trees have nothing to do with the layer 2 spanning tree protocol.

In rejecting claims 6 and 10, the Examiner maintained that Rekhter teaches the use of label-switched tunnels in a transparent LAN service in col. 1, lines 46-56. Applicant respectfully traverses these rejections. The cited passage refers to the telephone network and has nothing to do with a TLS as the term is defined in the present patent application (paragraph 20), which is in accord with common usage in the art.

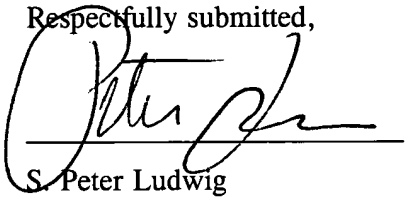
Thus, independent claims 1 and 14, as amended, are believed to be patentable over Rekhter. In view of the patentability of these independent claims, dependent claims 2, 3, 5-9, 11-13, 15, 16, 18-22 and 24-26 are also believed to be patentable.

Applicant has studied the additional references made of record by the Examiner and believes the claims in this application to be patentable over these references, whether the references are taken individually or in any combination.

Applicant believes the amendments and remarks presented above to be fully responsive to all of the grounds of rejection raised by the Examiner. In view of these amendments and remarks, all of the claims now pending in this application are believed to be in condition for allowance. Prompt notice to this effect is requested.

Date: July 21, 2005

Respectfully submitted,



S. Peter Ludwig
Reg. No. 25,351
Attorney for Applicants

DARBY & DARBY, P.C.
P.O. Box 5257
New York, NY 10150-5257
212-527-7700